IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Attorney Docket Number 15483US02

In re Application of:	)	
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Ramadas Lakshmikanth Pai	)	**ELECTRONICALLY FILED**
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Serial No.: 10/816,118	)	
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Filing Date: 4/1/2004	)	
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Examiner: Anner N. Holder	)	
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Confirmation No.: 8484	)	
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rt Unit No. 2621	)	
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Pre-Appeal Brief

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This amendment is filed in response to the Office Action mailed October 23, 2009.

REMARKS

Claims 1-3, 5, 7-9, and 15 are presently pending and stand rejected under 35 U.S.C. § 103(a) as being obvious from U.S. Patent No. 6,310,921 ("Yoshioka") in view of U.S. Patent No. 5,706,059 ("Ran"). Assignee respectfully requests pre-appeal review.

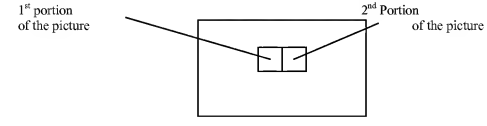
Claim 1 is recited below:

> A video request manager comprising:
>
> a first state machine for commanding a memory controller to fetch reference pixels for a first portion of a picture; and
>
> a second state machine for commanding a memory controller to write a second portion of the picture, wherein the second state machine loads the memory controller with the second portion while the memory controller fetches the reference pixels.

Notably, claim 1 recites among other limitations, "fetch reference pixels for a first portion of a picture" and "loads the memory controller with the second portion while the memory controller fetches the reference pixels".

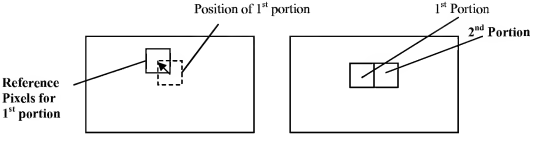
From the claim language, the "first portion" and the "second portion" are from the same picture. In certain video compression standards such as MPEG-2, frames are divided into portions, known as blocks. Specification 0020.

The following description is provided for illustrative purposes:



However, what is fetched is "*reference pixels* for a first portion of a picture". MPEG-2 also uses motion compensation/estimation. In motion compensation/estimation the blocks are compared to pixels of *other* frames (reference frames). When an appropriate (most similar, i.e. containing the same object(s)) portion of a reference frame is found, the differences between the portion of the reference frame (reference pixels) and

the block are encoded. **The difference between the reference pixels and the block, the prediction error**, is encoded using the discrete cosine transformation, thereby resulting in frequency coefficients. The frequency coefficients are then quantized and Huffman coded. **The location of the reference pixels in the reference frame is recorded as a motion vector**. 0022-0023.



Reference Frame

In Assignee's claimed invention, the "second state machine loads the memory controller with the **second portion** while the memory controller fetches the **reference pixels**". "[T]he reference pixels" claims antecedent basis to the **first portion** of the picture, not the second portion. The claimed reference pixels for the first portion of the picture and the second portion of the picture in exemplary case described above are bolded. The first portion would be coded as the difference between the reference pixels for the first portion and the first portion. The first portion is decoded by adding the difference to the reference pixels.

The Office Action indicates that:

> Yoshioka teaches a video request manager [Fig. 3; Fig. 4; Fig. 16] comprising: a first state machine for commanding a memory controller to fetch reference pixels for a first portion of a picture; [Fig. 4; Fig. 16; Col. 11 Line 64 – Col. 12 Line 7; Col. 13 Line 56 – Col. 14 Line 4; Fig. 10; Col. 18 Lines 6-14] and a second state machine for commanding a memory controller to write a second portion of the picture [fig. 4; Col. 13 Line 56 – Col. 14 Line 4; Fig. 10; Col. 18 Lines 6-14, 20-27] memory controller fetches the reference pixels [Col. 14 Lines 38-45]
>
> Yoshioka teaches pipeline processing in decoding including read/write function that is divided into two sections [see fig. 15 A&B] allowing them to operate in tandem.

Office Action at 3-4.

Although the Office Action indicates that "Yoshioka teaches pipeline processing in decoding including read/write function that is divided into two sections [see fig. 15 A&B] allowing them to operate in tandem", Assignee respectfully submits that the foregoing does not teach "fetch **reference pixels for a first portion** of a picture" and "loads the memory controller with the **second portion** while the memory controller fetches the reference pixels".

Assignee calls Examiner's attention to Yoshioka, Figure 4, and Col. 14, Lines 38-45, which was cited by Examiner as teaching "memory controller fetches the reference pixels".

> More specifically, for P-pictures or B-Pictures the pixel read/write unit 11 extracts **a rectangle area indicated by the motion vector** from the decoded reference frame in the external memory 3 via the memory controller 6 and **blends the rectangle area with the block** processed by the pixel calculation unit 10 **to obtain an original block image**. The decode result given by the pixel read/write unit 11 here is stored in the external memory 3 via the memory controller 6.

From the foregoing, note that the "rectangle area indicated by the motion vectors from the decoded reference frame in the external memory" and "the block" are blended together to obtain the original block image. In other words, the rectangular block are the reference pixels for the block processed by the pixel calculation unit 10.

However, what is claimed is "fetch **reference pixels for a first portion** of a picture" and "loads the memory controller with the ***second*** **portion**" in contrast with fetching **reference pixels for a first portion** and loading the **first portion**.

In Figure 10, Col. 18, Lines 6-27 (Emphasis Added)

> The read/write control unit 79 performs the MC on the block data inputted via the buffer 201 using the buffers A to D, and transfers the decoded images to the external memory 3 in units of two blocks. More specifically, the read/write control unit 79 controls the memory controller 6 to read out rectangle areas corresponding to the present two blocks from the reference frame stored in the external memory 3 in accordance with the motion vectors set during the header analysis by the processor 7. As a result, the data of the rectangle areas corresponding to the two blocks indicated by the motion vectors are stored in the buffer A or the buffer B. Following this, the blending unit 76 performs the halfpel interpolation on the rectangle areas of the two blocks, depending on the picture type (whether the I-pictures, the P-pictures, or the B-pictures). The read/write control unit 79 calculates pixel values of the present two blocks by blending the

block data inputted via buffer 201 with the halfpel interpolated rectangle areas (by adding the block data to the rectangle area), and then stores the calculated pixel values in the buffer B. These decoded blocks stored in the buffer B are transferred to the external memory 3 via the memory controller 6.

Similarly, contrast reference pixels for a block and the block, with reference pixels for a first block and a second block.

Finally, even if the foregoing was deemed to teach "fetch reference pixels for a first portion of a picture" "write a second portion of the picture", Assignee still maintains traverse. Although the Office Action indicates that "It is well known in the art that memory is capable of performign simultaneous read/write operations..." Office Action at 2-3, it would not be possible to apply to Yoshioka. Note that Yoshioka, "extracts a rectangle area indicated by the motion vector" and that "The decode result given by the pixel read/write unit 11 here is stored in the external memory 3 via the memory controller 6." However, even in view of the teachings of Ran, Yoshioka could not be modified to perform the foregoing simultaneously, because "the decode result ... stored in the external memory 3", only becomes available when "the rectangle area" is blended with the block. Thus, the rectangle area has to be extracted before the decode result can be stored in the external memory 3. Accordingly, Assignee respectfully traverses that it "would have been obvious ... to incorporate the simultaneous read/search and write teachigns of Ran with the device of Yoshioka".

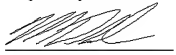
Accordingly, Assignee for at least the foregoing reasons, Asssignee respectfully traverses the rejection to claims 1 and 5 and requests their withdrawal, as well as the rejections to dependent claims 2, 3, and 7-9 and 15.

CONCLUSION

For at least the foregoing reasons, Assignee respectfully submits that each of the pending claims are allowable and Examiner is respectfully requested to pass this case to issuance. The Commissioner is hereby authorized to charge additional fees or credit overpayments to the deposit account of McAndrews, Held & Malloy, Account No. 13-0017.

Dated: March 23, 2010

Respectfully submitted,



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